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*Document Version*

Early version, also known as pre-print

*Publication date:*

2014

[Link to publication in University of Groningen/UMCG research database](#)

*Citation for published version (APA):*

Groen, Y., den Heijer, A., Fuermaier, A. B. M., Althaus, M., Tucha, L., & Tucha, O. (2014). [Poster on] Are traits of ADHD associated with self-reported social cognition in an adult community sample?. Poster session presented at Eunethydis 3rd International Conference on ADHD, Istanbul, Turkey.

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# Are traits of ADHD associated with self-reported social cognition in an adult community sample?

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## Objective and methods

Adults with ADHD are often impaired in their social relationships, but studies on social cognition are lacking. This study explores whether traits of ADHD in a community sample of adults are associated with self-reported social cognition.

Community sample (n = 685, 270 males, 415 females)  
Mean age: 33 years (range 16-84 years)

Online survey: self-report questionnaires on traits of empathy (Empathy Quotient<sup>1</sup>), systemizing (Systemizing Quotient<sup>2</sup>) and ADHD (ADHD Rating Scale (ARS)<sup>3</sup>; adulthood and retrospective childhood version)

EQ: Cognitive empathy (CE)



EQ: Emotional empathy (EE)



EQ: Social skills (SS)



SQ: Systemizing



SQ - EQ: Brain type (D)



ARS: ADHD symptoms



## Categorical approach

Selected participants with DSM-5 screening diagnosis of ADHD on ARS (adulthood: ≥5 clinical symptoms & childhood: ≥6 clinical symptoms) = “ADHD”. ANOVA (“ADHD”\*sex) group comparison with matched controls from the community sample.

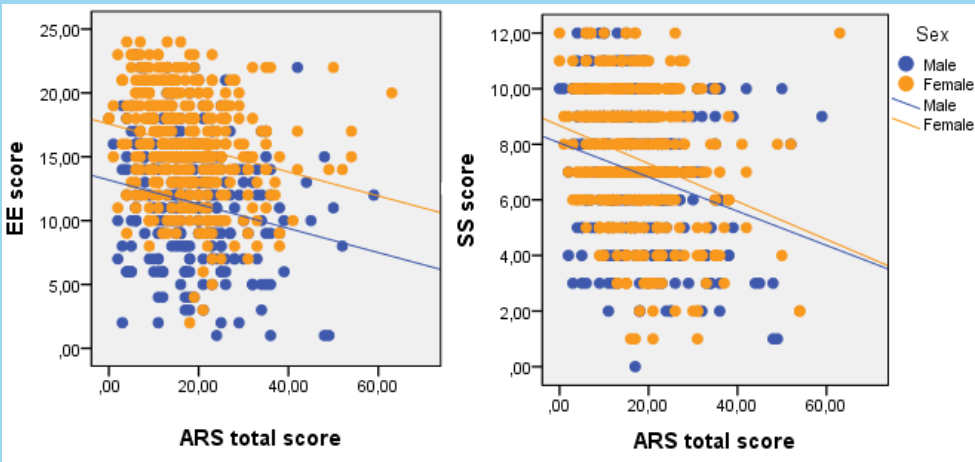
	“ADHD” (n=56) M(SD)	Controls (n=56) M(SD)	Main effect “ADHD”	Cohen’s d
total EQ	26.7 (9.6)	30.9 (10.5)	p=.013*	-0.42
CE	11.0 (5.6)	12.3 (5.0)	p=.128	-0.26
EE	11.1 (4.7)	13.2 (5.2)	p=.006**	-0.42
SS	5.9 (2.8)	6.9 (2.5)	p=.073	-0.38
SQ	59.5 (20.0)	53.7 (17.4)	p=.066	0.31
D	0.074 (0.121)	0.017 (0.121)	p=.004**	0.47

No significant interactions of “ADHD”\*sex were found.

## Dimensional approach

Whole-sample (n = 685) multiple linear regression analysis:  
CE + EE + SS + SQ + D-> ARS (adulthood total score)?

Significant models:  
Across sexes: SS + EE -> ARS ( $R^2 = 0.085$ ;  $p < .001$ )  
Males: SS -> ARS ( $R^2 = 0.06$ ;  $p < .001$ )  
Females: SS + EE -> ARS ( $R^2 = 0.091$ ;  $p < .001$ )



## Conclusions

Both approaches point to reduced emotional empathy in relation to traits of ADHD. Participants with a screening diagnosis of ADHD are characterized by a “male pattern” of self-reported social cognition.  
In the community sample ADHD traits link to capability in social skills.  
Future clinical ADHD studies should focus on possible impairments in empathy; sex differences should be taken into account.

## References

<sup>1</sup>Lawrence, E. J., et al. (2004). Psychological Medicine, 34(5), 911-919.  
<sup>2</sup>Wheelwright, S., et al. (2006). Brain Research, 1079(1), 47-56.  
<sup>3</sup>Kooij, J. J. S., et al. (2005). Psychological Medicine, 35(6), 817-827.